

In the Claims:

1-15. (Canceled).

16. (New) A transducer for bioacoustic signals, comprising:

a transducer element having a front side and a rear side, the front side being adapted for establishing intimate contact with a surface of a body part receiving direct interior sound from the body, said transducer element being mounted in a housing subject to airborne noise, and having a surface surrounding the front side of said transducer element, said transducer element and said surrounding surface being in intimate contact with the surface of said body part during use,

wherein the transducer element has an effective area that is less than 50% of the area of the surrounding surface of the housing, and

wherein the rear side of the transducer element is loaded by acoustical network means which are in communication with the surrounding air, said loading creating an extinguishing relationship between airborne noise signals influencing the front and rear sides of the transducer element, respectively.

17. (New) A transducer according to claim 16, wherein the effective area of the transducer element fulfills the area ratio $0.50 \geq ad/ah \geq 0.001$, where ad is the effective area and ah is the area of the surrounding surface.

18. (New) A transducer according to claim 16, wherein the effective area of the transducer element fulfills the area ratio $0.20 \geq ad/ah \geq 0.05$, where ad is the effective area and ah is the area of the surrounding surface.

19. (New) A transducer according to claim 16, wherein the transducer element is a compound diaphragm which produces an electrical output when subjected to bending.

20. (New) A transducer according to claim 16, wherein the transducer element is a compound diaphragm which produces an electrical output when subjected to differential stretching of a front side with respect to a rear side of the diaphragm.

21. (New) A transducer according to claim 16, wherein the acoustical network means comprises a cavity in the housing which is indirectly influenced by airborne noise.

22. (New) A transducer according to claim 16, wherein the transducer element is a compound diaphragm and wherein the acoustical network means comprises a cylindrical conduit having essentially the same diameter as the diaphragm.

23. (New) A transducer according to claim 16, wherein the acoustical network means comprises a cavity and at least one port in the housing.

24. (New) A transducer according to claim 23, wherein the port is formed by a narrow slit.

25. (New) A transducer according to claim 24, wherein the slit is made in a material that is not wetted by water.

26. (New) A transducer according to claim 16, wherein an elastic material capable of transmitting mechanical vibration is provided in sealing relationship with respect to the diaphragm in a manner sealing the diaphragm relative to the surface of a body part in use.

27. (New) A transducer according to claim 16, wherein the acoustical network means comprises a damping material.

28. (New) A transducer according to claim 27, wherein the transducer element is a compound diaphragm, wherein the acoustical network means comprises a cylindrical conduit having essentially the same diameter as the diaphragm and wherein the cylindrical conduit is provided with a damping material.

29. (New) A transducer according to claim 27, wherein the acoustical network means comprises a damping material, and wherein the damping material is used as a resistive element in a port.

30. (New) A transducer according to claim 27, wherein the damping material has water-repellent qualities.